

Claims

- [1] A driving circuit for driving a capacitive load of a display device, comprising:
driving signal supplying means for supplying a driving signal having a target voltage to be applied;
an amplifying stage for receiving the driving signal and selectively outputting the driving signal to the capacitive load; and
a pair of current sources for selectively supplying a positive current and a negative current to the capacitive load, respectively during their on-states, the driving circuit repeating a repetitive operation including a pre-operation where any one of the current sources is switched ON in accordance with the driving signal and then switched OFF and a post-operation where the amplifying stage is switched to a state for outputting the driving signal to the capacitive load after the pre-operation.
- [2] A driving circuit according to claim 1, wherein a duration length of an ON period of the relevant current source and/or a current supply rate of the relevant current source during the pre-operation is made variable in accordance with a value of the driving signal in a repetition period of the repetitive operation.
- [3] A driving circuit according to claim 1, wherein a duration length of an ON period of the relevant current source and/or a current supply rate of the relevant current source during the pre-operation is made variable in accordance with a value of the driving signal in a repetition period of the repetitive operation and a value of the driving signal in another repetition period previous to said repetition period.
- [4] A driving circuit for driving a capacitive load of a display device, comprising:
driving signal supplying means for supplying a driving signal having a target voltage to be applied;
an amplifying stage for receiving the driving signal and selectively outputting the driving signal to the capacitive load;
a pair of power sources for selectively performing charging and discharging to the capacitive load, respectively; and
comparing means having one input receiving a voltage value of the driving signal and the other input receiving a voltage value on an output line coupled to the capacitive load,
the driving circuit repeating a repetitive operation including a pre-operation where charging or discharging is performed by any one of the power sources and then stopped and a post-operation where the amplifying stage is switched to a state for outputting the driving signal to the capacitive load after the pre-operation,
the charging and discharging operation performed by the pair of the power sources being controlled based on a comparison output of the comparing means

- during the pre-operation.
- [5] A driving circuit as defined in claim 4, wherein a discharging operation is performed if the comparison output indicates that the voltage value on the output line is greater than the voltage value of the driving signal, and a charging operation is performed if the comparison output indicates that the voltage value on the output line is smaller than the voltage value of the driving signal.
- [6] A driving circuit as defined in claim 5, wherein one of the charging and discharging operations is continued until the comparison output indicates that the voltage value on the output line reaches the voltage value of the driving signal.
- [7] A driving circuit according to any one of claims 1 to 6, wherein the target voltage is a gray-scale voltage.
- [8] A driving circuit according to any one of claims 1 to 7, wherein the capacitive load is a liquid crystal cell.
- [9] A driving circuit according to any one of claims 1 to 8, wherein the driving signal supplying means includes analog to digital converting means.
- [10] A display device using a driving circuit according to any one of claims 1 to 9.